

# SIEMENS

## LITHOSTAR Multiline

**SP**

### **Service Software**

Software parameters / Monitoring

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English

Doc. Gen. Date: 11.03

Print No.: RXL2-120.032.02.05.02

Replaces: RXL2-120.032.02.04.02

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**Document revision level**

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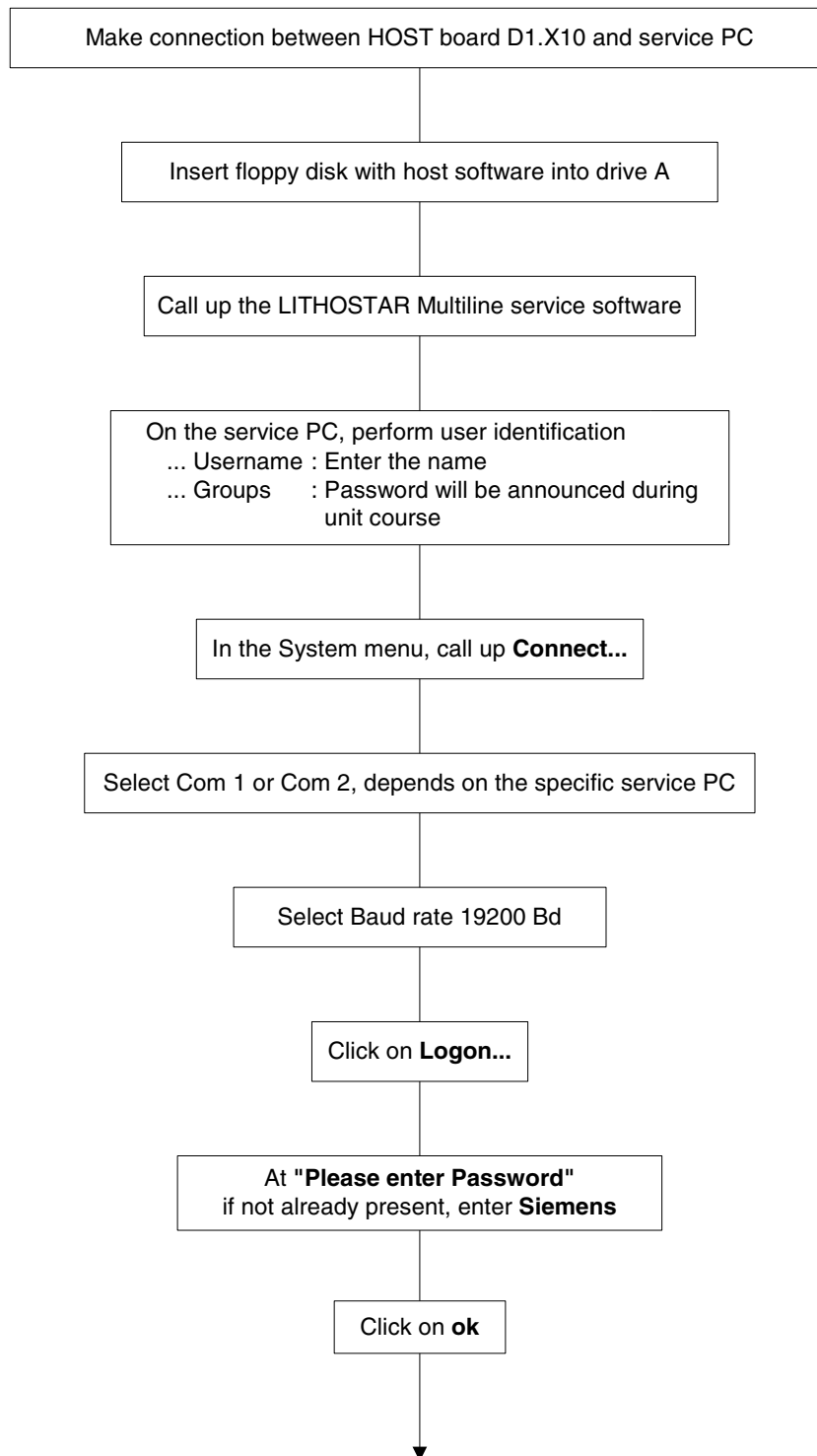
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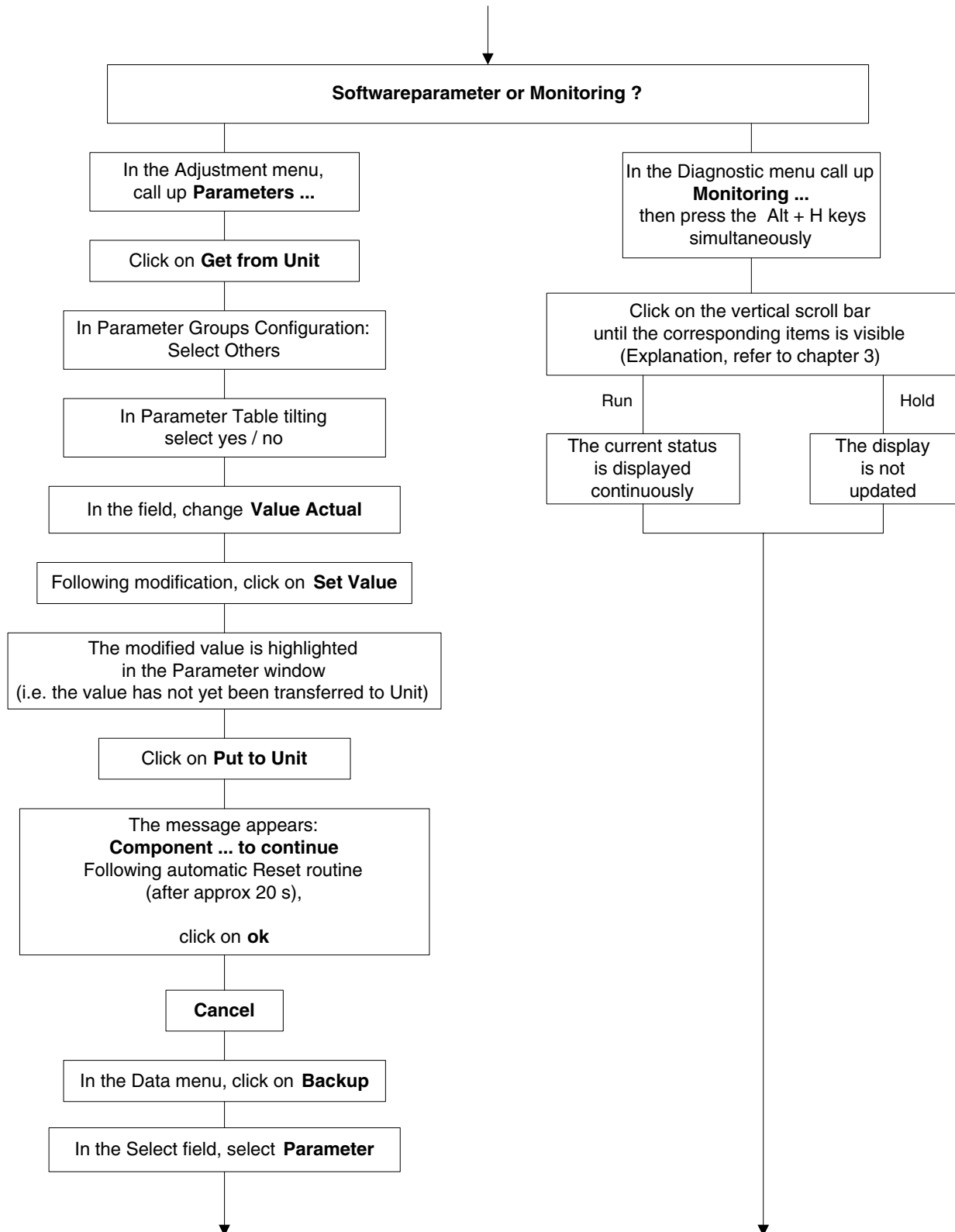
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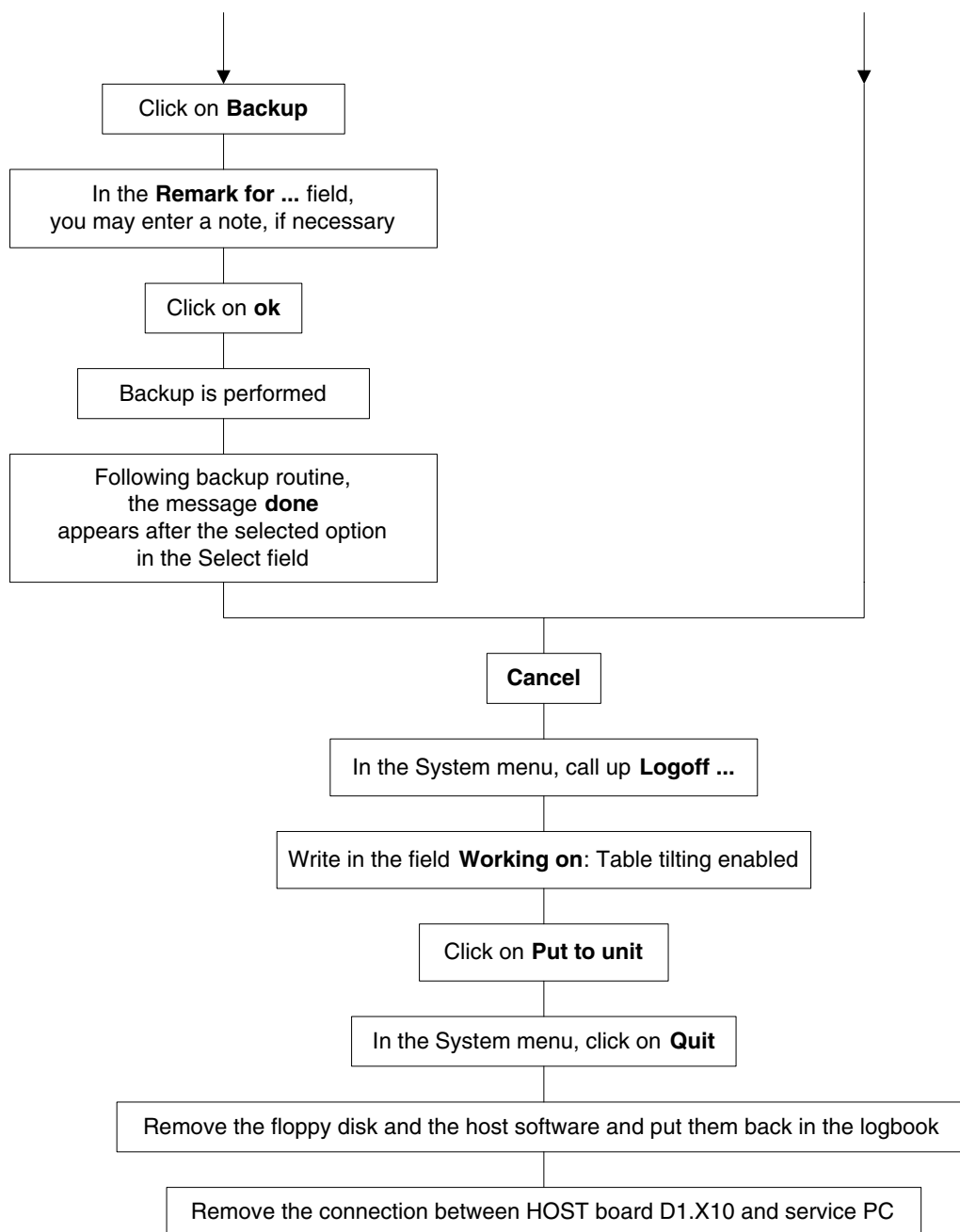
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## Logon / Logoff of the service software







## ⚠ CAUTION

The contents of "parameter groups" differ depending on the host software version.

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Adjustment: Parameter (from Unit)

Parameter Groups: BIOS: Error queue

Parameter:

Parameter:	Type	Value
Error level	UChar	0
Short error queue	Byte	00

Get from Unit

Put from Unit

Load from File

Save to File

Print ...

Cancel

Set Value

Value

Actual: 0

Typical: 2

Range

Normal: 0 4

Absolute: 0 4

Chapter heading

Extract

Parameter Groups: BIOS: Error queue		
Parameter	Type	Value
Error level	UChar	0
Short error queue	Byte	00

Only a partial view of the field for parameter adjustments is shown on the following pages.  
The parameters are shown as in the example above  
"Parameter Groups: BIOS Error queue".

## CAUTION

If it is not possible to transfer an individual parameter to the system, perform "Save to File" first.  
Then perform a Restore of the entire parameters file.

**Existing Parameter groups**

Parameter Groups:

- BIOS: Error queue
- BIOS: Host parameter
- BIOS: Version number
- Clinic data: Clinic name
- Configuration: Motor devices
- Configuration: Others
- Configuration: User terminal
- Interface: Collimator N
- Interface: Image intensifier
- Interface: Image storage
- Interface: Shock wave system
- Interface: Ultrasound
- Interface: XCS Controller Generator
- Parameter: am 7 TV Iris
- Parameter: am 8 Cone length
- Parameter: am 9 Cone rotation
- Unregulated motion

## BIOS: Error queue

	Parameter	Type	Value
1	Error level	UChar	0
2	Short error queue	Byte 00	00

### NOTE

The parameters listed in the "Value" column are not binding. They are based on the parameter set contained in the diskette delivered with the HOST software.

### Explanation:

- 1 Currently not in function
- 2 Selects the short-term error memory, i.e. not all errors are shown in the **Diagnostic Error log** menu, only the errors since the last reset or since switching the system on.
  - 00 = not activated
  - FF = activated

**BIOS: Host parameter**

	Parameter	Type	Value
1	Multiline Version	UChar	0
2	Password	String	siemens
3	Serial No.	String	6001

**NOTE**

The parameters listed in the "Value" column are not binding. They are based on the parameter set contained in the diskette delivered with the HOST software.

**Explanation:**

- 1 1 = Multiline
- 2 Variable password
- 3 System serial number

## BIOS: Version number

	Parameter	Type	Value
1	Version number of parameter	String	VA00A

**NOTE**

The parameters listed in the "Value" column are not binding. They are based on the parameter set contained in the diskette delivered with the HOST software.

**Explanation:**

- 1    Version of parameter software

**Clinic data**

	Parameter	Type	Value
1	Clinic name	String	Name of hospital (max. 32 characters)

**NOTE**

**The parameters listed in the "Value" column are not binding.  
They are based on the parameter set contained in the diskette  
delivered with the HOST software.**

**Explanation:**

- 1 Clinic name  
The clinic name entered in the parameter file is displayed on the DL monitor, if no other clinic name is entered in the patient data screen form.  
A maximum of 32 characters can be entered. The 32 blanks must be deleted before entering the clinic name.

## Configuration: Motor devices

	Parameter	Type	Value
1	MC0 System available	Byte	FF
2	MC0 am 1 Z Right	Byte	00
3	MC0 am 2 Z Left	Byte	01
4	MC0 am 3 W Shockwave	Byte	02
5	MC0 am 4 O C-arm	Byte	03
6	MC1 System available	Byte	FF
7	MC1 am 5 X Cross	Byte	05
8	MC1 am 6 Y Length	Byte	06
9	MC1 am 7 TV Iris	Byte	07
10	MC1 am 8 Cone length	Byte	08
11	MC1 am 9 Cone rotation	Byte	09
12	MC2 am System available	Byte	00
13	MC2 am _10 Swhead orbital	Byte	0A
14	MC2 am _11 II-lift	Byte	0B

### NOTE

The parameters listed in the "Value" column are not binding. They are based on the parameter set contained in the diskette delivered with the HOST software.

### Explanation:

1 Motor controller D4a  
00 = not available FF = available

### 2 - 5; 7 - 10; 13;14

Selection of corresponding channels

00 = channel 1 01 = channel 2 02 = channel 3 etc.  
FF = not selected

6 Motor controller D4b  
00 = not available FF = available

12 Motor controller D4c  
00 = not available FF = available

**Configuration: Others**

	Parameter	Type	Value
1	Table tilting yes/no	Byte	FF

**NOTE**

The parameters listed in the "Value" column are not binding. They are based on the parameter set contained in the diskette delivered with the HOST software.

**Explanation:**

- 1 Table tilting  
00 = not available      FF = available

**CAUTION**

Table tilting must not be enabled unless it has been purchased, i.e. a BZ specifying this option has been issued.



## Configuration: User terminal

	Parameter	Type	Value
1	Control at desk (Slave 2)	Byte	FF
2	Control at unit (Slave 7)	Byte	FF
3	Control at unit (Slave 8)	Byte	00
4	Language	UChar	0
5	User Terminal Ultrasound	Byte	00

### NOTE

The parameters listed in the "Value" column are not binding. They are based on the parameter set contained on the diskette delivered with the HOST software.

### Explanation:

- 1 Tableside control at control desk  
00 = not available                      FF = available  
(Slave 2) = address set on tableside control panel
- 2 Tableside control at unit  
00 = not available                      FF = available  
(Slave 7) = address set on tableside control panel
- 3 Footswitch for system movements  
00 = not available                      FF = available  
(Slave8) = address set on the footswitch
- 4 Language setting in user PC terminal  
0 = German                                      2 = French  
1 = English                                      3 = Spanish
- 5 Tableside control on Sonoline  
00 = not available                      FF = available

**Interface: Collimator N**

	Parameter	Type	Value
1	Cassette format horizontal	UInt	3300
2	Cassette format vertical	UInt	4000
3	Memory Type OFF = 0, ON $\geq$ 1	Byte	01
4	Pointformat	UInt	650
5	Slotformat horizontal	UInt	700
6	Slotformat vertical	UInt	2000
7	System available	Byte	FF
8	Systemtype	UChar	1

**NOTE**

**The parameters listed in the "Value" column are not binding. They are based on the parameter set contained in the diskette delivered with the HOST software.**

**Explanation:**

- 1 Horizontal cassette format in 1/10 mm
- 2 Vertical cassette format in 1/10 mm
- 3 Memory Type            00 = no Collimator memory  
                                 01 = Collimator memory
- 4 Smallest fixed collimator setting in 1/10 mm
- 5-6 Slot format setting in 1/10 mm  
                                 Default Value RBV23 = 2000  
                                 Default Value RBV33 = 2800
- 7 Collimator  
   00 = not available      FF = available
- 8 1 = Collimator without iris  
   2 = Collimator with Iris

## Interface: Image intensifier

	Parameter	Type	Value
1	Inlineformat	UInt	1100
2	Systemtype	Byte	01
3	Zoom 0	UInt	2000
4	Zoom 1	UInt	1600
5	Zoom 2	UInt	1250
6	Zoom 3	UInt	0

### NOTE

The parameters listed in the "Value" column are not binding. They are based on the parameter set contained in the diskette delivered with the HOST software.

### Explanation:

1 Collimation for inline x-ray

2 Type of image intensifier (II)  
01 = SIRECON 23  
02 = SIRECON 33

3-6 Image intensifier (zoom) formats

	Sirecon 23	Sirecon 33
Zoom 0	2000	2800
Zoom 1	1600	2000
Zoom 2	1250	1550
Zoom 3	0	1200

	Parameter	Type	Value
1	Edge enhancement	Byte	04
2	Line frequency 50/60 Hz	Byte	00
3	Noise reduction high (k-Factor)	UChar	8
4	Noise reduction low (k-Factor)	UChar	2
5	Noise reduction normal (k-Factor)	UChar	4
6	System available	Byte	FF
7	Systemtype	UChar	1
8	Test image	UChar	00

**The parameters listed in the "Value" column are not binding. They are based on the parameter set contained in the diskette delivered with the HOST software.**

**1** Adjustable from 00 to 08

3-5 Noise reduction on user PC:	Step 1 low	Step 2 normal	Step 3 high
---------------------------------	---------------	------------------	----------------

[illegible]

00 no test image available

01 Gray scale, horizontal

02 Double gray scale, horiz.

### 03 Black-to-white step, horiz.

04 Constant gray 50% (=80H)

05 Gray step 1

## 06 Gray step 2

### 07 Gray step , vertical

08 Double gray scale, vertical

09 Black-to-white step, vertical

0A Grid

0B SMPTE-similar test img. without grid

0C SMPTE-similar test img. with grid

0D Constant black (0%)

0E Bar 0% - 55.5% (width: 76 Pixel pixels)

## Interface: Shockwavesystem

	Parameter	Type	Value
1	Coupling pressure high	UChar	8
2	Coupling pressure low	UChar	2
3	Coupling pressure medium	UChar	4
4	ECG-Trigger available	Byte	00
5	Reset shock counter generator	Byte	00
6	Reset shock counter shockwave	Byte	00
7	Reset shock counter spark gap	Byte	00
8	Reset shock counter total	Byte	00
9	Reset shock counter us probe	Byte	00
10	Resp-Trigger available	Byte	00
11	Shock frequency	UChar	20
12	System available	Byte	FF
13	System type	UChar	1
14	full energy range yes/no	Byte	00

### NOTE

The parameters listed in the "Value" column are not binding. They are based on the parameter set contained in the diskette delivered with the HOST software.

### Explanation::

1	Coupling pressure Step 3	Adjustment range 0 - F 2 = 6 mbar 4 = 12 mbar 8 = 24 mbar
2	Coupling pressure Step 1	
3	Coupling pressure Step 2	
4	ECG trigger (optional) *	00 = not available      FF = available
5	shock counter shock wave generator	Reset procedure: Input <b>FF</b> , click on Set Value execute <b>Put to unit</b> , input <b>00</b> , click on Set Value, execute <b>Put to Unit</b>
6	shock counter, shock wave head	
7	shock counter spark gap	
8	shock counter total	
9	shock counter us probe	
10	Respiratory trigger (optional) *	00 = not available      FF = available
11	Shock frequency for shock wave	15 = 1.5 Hz,      20 = 2 Hz (example)
12	Shock wave system	00 = not available      FF = available
13	1 = Shock wave head CX	
14	full energy range *	00 = not available      FF = available

### CAUTION

\* ECG / resp. trigger / full energy range may be enabled only if the customer has purchased this option, i.e. a BZ has been issued.

## Interface: Ultrasound

	Parameter	Type	Value
1	Line frequency	Byte	00
2	System available	Byte	00
3	Target	UInt	136

## NOTE

The parameters listed in the "Value" column are not binding. They are based on the parameter set contained in the diskette delivered with the HOST software.

**Explanation:**

- |          |   |                |
|----------|---|----------------|
| <b>1</b> | Line frequency<br>00 = 50 Hz            | 01 = 60 Hz     |
| <b>2</b> | Ultrasound system<br>00 = not available | FF = available |
| <b>3</b> | Target<br>Isocenter, value in mm        |                |

## Interface: XCS Controller Generator

	Parameter	Type	Value
1	Fluoro - Automatic 1	UChar	0
2	Fluoro - Automatic 2	UChar	1
3	Generator type	UChar	00
4	System available	Byte	FF

### NOTE

The parameters listed in the "Value" column are not binding. They are based on the parameter set contained in the diskette delivered with the HOST software.

### Explanation:

- 1 For POLYDOROS SX only:  
Selection of Fluoroscopic curve 1 on the operating PC  
0 = Antiisowatt
- 2 For POLYDOROS SX only:  
Selection of Fluoroscopic curve 2 on the operating PC  
1 = Litho 63 KV (450 W) 2 = Litho 63 kV high contrast (1,1 kW)
- 3 Generator type  
00 =POLYDOROS LX 01= POLYDOROS SX
- 4 Generator  
00 = not available FF = available

The selection of characteristic curves is determined by the generator configuration settings.

**Parameter: am 7 TV Iris**

	Parameter	Type	Value
1	DR - Zoom 0	Int	530
2	DR - Zoom 1	Int	530
3	DR - Zoom 2	Int	530
4	DR - Zoom 3	Int	680
5	FLUORO Zoom 0	Int	
6	FLUORO Zoom 1	Int	
7	FLUORO Zoom 2	Int	
8	FLUORO Zoom 3	Int	

**NOTE**

The parameters listed in the "Value" column are not binding. They are based on the parameter set contained in the diskette delivered with the HOST software.

**Explanation:**

**1-4** TV iris aperture for instant stored image (with POLYDOROS SX only) for the individual I.I. formats

**5-8** TV iris aperture for fluoroscopy for the individual I.I. formats

Default values:

	Sirecon 23	Sirecon 33
FLUORO Zoom 0	730	1080
FLUORO Zoom 1	730	1080
FLUORO Zoom 2	730	1080
FLUORO Zoom 3	1330	1330

**NOTICE**

The values for ZOOM 0 - 2 must be the same.



## Parameter: am 8 Cone length

	Parameter	Type	Value
1	Incremental encoder	UChar	
2	Position factor, Mantisse	Word	
3	Safety position (1/10 mm)	Int	

### NOTE

The parameters listed in the "Value" column are not binding. They are based on the parameter set contained in the diskette delivered with the HOST software.

### Explanation:

- 1 Cone drives with serial numbers < 2000 Value = 00  
Cone drives with serial numbers > 2000 Value = 01
- 2 Cone drives with serial numbers < 2000 Value = 9919  
Cone drives with serial numbers > 2000 Value = 9F7A
- 3 Cone drives with serial numbers < 2000 Value = 300  
Cone drives with serial numbers > 2000 Value = 360

**Parameter: am 9 Cone rotation**

	Parameter	Type	Value
<b>1</b>	Incremental encoder	UChar	
<b>2</b>	Position factor, Mantissee	Word	
<b>3</b>	US: Delay time (ms)	UInt	1000

**NOTE**

**The parameters listed in the "Value" column are not binding. They are based on the parameter set contained in the diskette delivered with the HOST software.**

**Explanation:**

- 1** Cone drives with serial numbers < **2000 Value = 00**  
Cone drives with serial numbers > **2000 Value = 01**
- 2** Cone drives with serial numbers < **2000 Value = B9DB**  
Cone drives with serial numbers > **2000 Value = C19A**
- 3** Rotation time interval  
Change from low speed to high speed.  
(the higher the value, the longer it will stay in low speed).

## Unregulated motion

	Parameter	Type	Value
1	am 1 Z Right max.	Byte	A0
2	am 1 Z Right min.	Byte	60
3	am 2 Z Left max.	Byte	A0
4	am 2 Z Left min.	Byte	60
5	am 3 W Shock head max.	Byte	A0
6	am 3 W Shock head min.	Byte	60
7	am 4 O C-arm max.	Byte	A0
8	am 4 O C-arm min.	Byte	60
9	am 5 X Cross max.	Byte	A0
10	am 5 X Cross min.	Byte	60
11	am 6 Y Length max.	Byte	A0
12	am 6 Y Length min.	Byte	60
13	am 7 TV Iris max.	Byte	A0
14	am 7 TV Iris min.	Byte	60
15	am 8 Cone length max.	Byte	A0
16	am 8 Cone length min.	Byte	60
17	am 9 Cone rotation max.	Byte	A0
18	am 9 Cone rotation min.	Byte	60

### NOTE

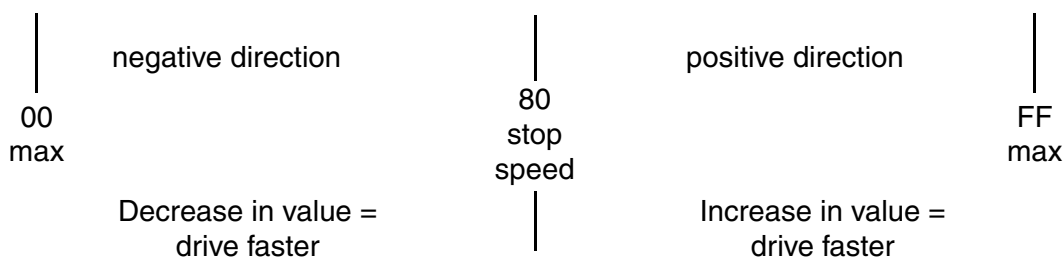
The parameters listed in the "Value" column are not binding. They are based on the parameter set contained in the diskette delivered with the HOST software.

### Explanation:

1-2 Pulse interval = speed

Min 00 - 80 = negative direction

Max 81 - FF = positive direction



Both directions should have the same speed.

3-18 See 1-2

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Name:	Explanation:	
AD 24 V	min. 420	max. 540 otherwise error message
AD U27V	min. 360	max. 800 otherwise error message
AD U30V	min. 400	max. 780 otherwise error message
AD URef	min. 500	max. 524 otherwise error message
Collimator hor. position	numerical value in $\frac{1}{10}$ mm	
Collimator ver. position	numerical value in $\frac{1}{10}$ mm	
Identifier CMOS	no function	
Identifier SW Reset	no function	
Identifier test mode	no function	

**Example for reading out the ports:**

Item	Type	Value							
		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
P30	Binary	X	X	X	X	X	X	X	X
P31	Binary	X	X	X	X	X	X	X	X
P32	Binary	1	0	0	1	1	1	1	0
P33	Binary	X	X	X	X	X	X	X	X

**The following information may be substituted for port 32 in the above table.**

Bit 0: Emergency stop **not** activated, S54 (Control table), S56 (Unit)

Bit 1: Switch ring on I.I. **not** activated S51

Bit 2: Switch ring on tube **not** activated S52

Bit 3: Switch ring on shock head **not** activated S50a/b

Bit 4: Switch ring on cassette holder **not** activated S53a/b

Bit 5: Danger button S55 **not** activated (Control table)

Bit 6: Danger button S57 **not** activated (Table)

Bit 7: Longitudinal tube pressure switch **not** activated S21

**Name:**

P30 Input:

**Explanation:**

Bit	D6.X2	Function
0	a15	0 = Footswitch (S35) HK, DR activated
1	a1	0 = Footswitch (S34) DL activated
2	a1	0 = S27 VK (Control table) activated
3	a1	0 = S27 HK (Control table) activated
4	a1	0 = S32 DL (Control table) activated
5	a20	nc
6	a21	0 = Sw triggering D28, S1 (Control table) activated
7	a22	0 = Photoelectric barrier activated

P31 Input:

Bit	D6.X2	Function
0	c7	nc
1	c8	nc
2	c9	nc
3	c10	nc
4	c11	nc
5	c12	nc
6	c13	nc
7	c14	nc

P32 Input:

Bit	D6.X2	Function
0	b15	1 = Emergency stop activated, S54 Control table, S56 Unit
1	b16	0 = Switch ring on I.I. activated S51
2	b17	0 = Switch ring on tube activated S52
3	b18	0 = Switch ring on shock head activated S50a/b
4	b19	0 = Switch ring on cassette holder activated S53a/b
5	b20	1 = Danger button S55 activated (Control table)
6	b21	1 = Danger button S57 activated (Table)
7	b22	1 = Longitudinal tube pressure switch activated S21

## Name:

P33 Input:

## Explanation:

Bit	D6.X2	Function
0	c15	0 = Contactor K1 and K2 at board D21 activated
1	c16	0 = Contactor K3 at board D21 activated
2	c17	1 = Uro late is insert S22
3	c18	1 = Ultrasound transducer installed S20
4	c19	0 = Table extension left S23 (head left) mounted
5	c20	0 = Table extension right S24 (head left) mounted
6	c21	1 = Cassette holder mounted S25
7	c22	0 = Cassette inserted S26

P34 Input:

Bit	D6.X2	Function
0	X14.6	1 = Acquisition image storage
1	intern	0 = X-ray release by Com Controller
2	intern	0 = Overload
3	intern	nc
4	intern	1 = Reset Com Controller active
5	intern	1 = Watchdog Com Controller active
6	intern	1 = Watchdog safety contactor active
7	intern	1 = Reset by Watchdog HOST active

**Name:**

P50 Output:

**Explanation:**

Bit	D6.X2	Function
0	c26	1 = Power supply for contactor K1 + K2, great drives
1	c27	1 = Power supply for K3, small drives
2	nc	nc
3	nc	nc
4	nc	nc
5	nc	nc
6	nc	nc
7	nc	nc

P52 Output:

Bit	D6.X2	Function
0	a23	1 = Light danger button on
1	a24	nc
2	a25	nc
3	a26	nc
4	a27	nc
5	a28	nc
6	a29	nc
7	a30	nc

P53 Output:

Bit	D6.X2	Function
0	b23	1 = Learning phase start
1	b24	1 = Respiratory triggering on
2	b25	Greyfilter in
3	b26	Greyfilter out
4	b27	nc
5	b28	nc
6	b29	1 = LED at board D28 on (Shock wave triggering)
7	b30	nc



**Name:**

P54 Output:

**Explanation:**

Bit	D6.X2	Function
0	a2	1 = Zoom 1 selected
1	b2	1 = Zoom 2 selected
2	c2	1 = Zoom 3 selected
3	nc	nc
4	nc	nc
5	nc	nc
6	X14.4	1 = Image storage start
7	X14.8	1 = Image storage download

Pos switch

no function

Refswitch ., ., ., ., TR,TL,,.

Example: ., ., Y, X, O, W, ZL, ZR

Refswitch ., ., Y,X,O,W,ZL,ZR

0, 0, 0, 0, 1, 1, 0, 0

i.e. reference switch O, W closed, all others open

SID

no function

Shock counter generator

number of shock waves emitted

Shock counter shockwaveh.

number of shock waves emitted

Shock counter spark gap

number of shock waves emitted

Shock counter total

number of shock waves emitted

Shock counter US probe

number of shock waves emitted

Switch

no function

am 1 Z Right ADC position

numerical value in  $1/10$  mm

am 1 Z Right ADC value

potentiometer value converted in bits

am 1 Z Right MC position

numerical value in  $1/10$  mm

am 1 Z Right speed

current speed

am 2 Z Left ADC position

numerical value in  $1/10$  mm

am 2 Z Left ADC value

potentiometer value converted in bits

am 2 Z Left MC position

numerical value in  $1/10$  mm

am 2 Z Left speed

current speed

am 3 W Shockh. ADC position

numerical value in  $1/10$  mm

am 3 W Shockh. ADC value

potentiometer value converted in bits

am 3 W Shockh. MC position

numerical value in  $1/10$  mm

am 3 W Shockh. speed

current speed

Name:	Explanation:
am 4 O C-arm ADC position	numerical value in $1/100^\circ$
am 4 O C-arm ADC value	potentiometer value converted in bits
am 4 O C-arm MC position	numerical value in $1/100^\circ$
am 4 O C-arm speed	current speed
am 5 X Cross ADC position	numerical value in $1/10$ mm
am 5 X Cross ADC value	potentiometer value converted in bits
am 5 X Cross MC position	numerical value in $1/10$ mm
am 5 X Cross speed	current speed
am 6 Y Length ADC position	numerical value in $1/10$ mm
am 6 Y Length ADC value	potentiometer value converted in bits
am 6 Y Length MC position	numerical value in $1/10$ mm
am 6 Y Length speed	current speed
am 7 TV-Iris ADC position	numerical value in $1/10$ mm
am 7 TV-Iris ADC value	potentiometer value converted in bits
am 7 TV-Iris MC position	numerical value in $1/10$ mm
am 7 TV-Iris speed	current speed
am 8 Cone len. ADC position	numerical value in $1/10$ mm
am 8 Cone len. MC position	potentiometer value converted in bits
am 8 Cone length ADC value	numerical value in $1/10$ mm
am 8 Cone length speed	current speed
am 9 Cone rot. ADC position	numerical value in $1/100^\circ$
am 9 Cone rot. ADC value	potentiometer value converted in bits
am 9 Cone rot. MC position	numerical value in $1/100^\circ$
am 9 Cone rot. speed	current speed
am_10 Swhead ADC position	no function
am_10 Swhead ADC value	no function
am_10 Swhead MC position	no function
am_10 Swhead speed	no function
am_11 II lift ADC position	no function
am_11 II lift ADC value	no function
am_11 II lift MC position	no function
am_11 II lift speed	no function

Chapter 0	Page 1	Adapted cover sheet.
	Page 2	Revision page complemented.
	Page 3	Contents updated.
Chapter 2	Page 10	Table: Interface Collimator N - Point 3 Text new inserted.
	Page 6	Table: Explanation - Point 3 Text new inserted.

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